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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,876	03/01/2002	Mark A. Lauer	LAUM-005	6248

24501 7590 01/14/2004

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EXAMINER	
YAM, STEPHEN K	
ART UNIT	**PAPER NUMBER**
2878	

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,876	LAUER, MARK A.	
	Examin r	Art Unit	
	Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-4 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 March 2002 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1202,1202.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:

- reference character "70" has been used to designate both an amplifier (paragraph 0021) and a conductor (paragraph 0022).
- reference characters "50", "60" has been used to designate both a light beam (Fig. 1) and a tilting mirror amplifier (Fig. 2).
- reference character "54" has been used to designate both a light beam (Fig. 1) and a mirror (Fig. 2).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 99 (Paragraph 0021). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

The specification identifies numerals 62, 66 referenced in the drawings as both "leads" (paragraph 0020) and "torsion bars" (paragraph 0024).

The specification identifies numerals 52, 56 referenced in the drawings as both "leads" (paragraph 0021) and "torsion bars" (paragraph 0020).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin et al. US Pre-grant Publication No. 2002/0097952 in view of Walker et al. US Patent No. 6,445,495.

Jin et al. teach (see Figs. 2 and 10) a device (20/158, 154a, 154b) (see Paragraph 0059, lines 6-8) comprising a substrate (24), at least one optical amplifier (154a, 154b), a plurality of mirrors (25) attached to a substrate and movable relative to the substrate independent of each other (see Paragraph 0024, lines 8-12), wherein light having a wavelength within a selected range enters the device (entering (154a)), is amplified by the amplifier (see Paragraph 0057, lines 11-13), and reflected by one of the mirrors (see Paragraph 0059, line 8) to exit the device in a direction controlled by the mirror (see Paragraph 0003, lines 8-9). Regarding Claim 2, Jin et al. teach (see Fig. 10) light amplified by the amplifier before (using (154a)) and after (using (154b))

reflection by the mirror. Regarding Claim 4, Jin et al. teach the mirrors and the region above the mirrors contained in the substrate (see Fig. 2). Jin et al. do not teach the optical amplifier as solid-state or attached to the substrate or the mirror and moving with the mirror relative to the substrate. Walker et al. teach (see Fig. 3D) a device comprising at least one solid-state optical amplifier (300) attached to a mirror (320), wherein light having a wavelength within a selected range (entire E-M spectrum) enters (314) the device, is amplified by the amplifier, and is reflected by the mirror to exit (316) the device in a direction controlled by the mirror, wherein the light is amplified by the amplifier before and after reflection by the mirror (see Col. 6, lines 31-36), and wherein the amplifier is attached to the mirror and is always oriented in the direction of the mirror (since it is directly attached to the mirror). It would have been obvious to one of ordinary skill in the art to replace the amplifier of Jin et al. with the solid-state optical amplifier attached to each mirror as taught by Walker et al. in the device of Jin et al., to integrate the amplification stage with the mirror to conserve space and provide integration for the components of the device using cheaper solid-state elements. Since the optical amplifier is directly attached on top of the mirror in Walker et al., the amplifier moves with the mirror when attached on top of the movable mirrors of Jin et al., and since the amplifier resides in the region above the mirrors, the amplifier is contained in the substrate, as the substrate surrounds the mirrors and the region above the mirrors in Jin et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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THANH X. LUU
PATENT EXAMINER